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Provided is a signal processor including a band-pass filter and alownoise amplifier, which are covered with a vacuum insulation layer and cooled by a refrigerator. Further, a getter material where a heater for activation is built therein is installed in the vacuum insulation layer as a mechanism to control increase of gas pressure inside the vacuum insulation layer. The getter material is heated and activated by the heater when activating the refrigerator, and thus the gas pressure inside the vacuum insulation layer is reduced by operation of the getter material and status of vacuum insulation can be improved when the refrigerator is activated after the refrigerator has been stopped due to a power outage or the like.